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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,604	11/15/2000	Youn Soo Bae	2529-000047	8368

7590 10/29/2002

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EXAMINER	
LE, DANG D	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 10/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/700,604	BAE
	Examiner	Art Unit
	Dang D Le	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-7* is/are pending in the application.

4a) Of the above claim(s) *6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5 and 7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *16 September 2002* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-3, 5 and 7 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frederick in view of Morrill.

Regarding claim 1, Frederick shows a magnetic circuit for a rotating apparatus having a parallel structure or a skew structure of magnet pole pieces of magnets or armatures with respect to a shaft (24, Figure 1), comprising:

- A rotating shaft (24);
- A rotor (23) having plurality of pole pieces rotated by attraction force and repulsion force of a magnetic field.
- A plurality of armatures (stators 11) each having a coil (15) and the pole pieces of the rotor being arranged in parallel or in skew with the rotating shaft.

Frederick does not show:

- A plurality of supporters fixedly mounted in a perpendicular direction to the circumference of the rotating shaft;
- The rotor having a plurality of magnets, each magnet having a magnet pole piece being arranged in parallel with respect to the shaft and located on an end of one of the plurality of supporters; and
- Each coil receiving induced magnetic flux of the rotors.

For the purpose of providing a provision of fastening the permanent magnets to the shaft in order to make a permanent magnet rotor, Morrill shows:

- A plurality of supporters (bolts) fixedly mounted in a perpendicular direction to the circumference of the rotating shaft (11);
- The rotor having a plurality of magnets (14), each magnet having a magnet pole piece being arranged in parallel with respect to the shaft (11) and located on an end (bolt heads) of one of the plurality of supporters; and
- Each coil receiving induced magnetic flux of the rotors.

Since Frederick and Morrill are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to mount the magnets with a plurality of supporters and use the permanent magnet rotor as taught by Morrill for the purpose discussed above.

Regarding claim 2, it is noted that Frederick and Morrill also show the rotors having the parallel structure or the skew structure of the magnet pole pieces of the

magnets with respect to the shaft so as to be rotated by a force of a magnetic field in a parallel direction with the rotating shaft.

Regarding claim 3, it is noted that Frederick also shows the armatures having the parallel structure or the skew structure of magnet pole pieces of magnets or armatures with respect to the shaft, and the magnets or armatures being one of C-shaped.

Regarding claim 5, it is noted that Frederick and Morrill also show a magnetic circuit for a rotating apparatus which comprises, the magnet pole pieces of the magnet or the armatures having the parallel structure or the skew structure with respect to the shaft and the rotors being rotated by a force of a magnetic field formed in the parallel direction with the rotating shaft and thus minimizing the lateral vibration of the shaft under rotation.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frederick in view of Morrill and further in view of Mizutani et al.

Regarding claim 7, Frederick shows an electrical apparatus (Figure 1) comprising:

- A shaft (24, Figure 1) having an axial direction and a radial direction;
- A rotor (23)
- A plurality of arcuate stators (11) surrounding the shaft, each stator having a leg with a coil (15) attached thereto and ends that mutually face each other to define a gap through which the rotor rotates.

Frederick does not show:

- A plurality of supports extending radially from the shaft;

- Ends of each support having a pair of magnets mounted thereto, each pair containing magnets of opposite polarity, each magnet having pole faces extending parallel to the axial direction of the shaft; and
- Adjacent magnet pairs having magnetic polarities which are reversed with respect to each other. Frederick uses an induction rotor.

Morrill shows a plurality of supports (bolts) extending radially from the shaft (11) and ends of each support having a magnet (14) mounted thereto, each magnet having pole faces extending parallel to the axial direction of the shaft for the purpose of providing a provision of fastening the permanent magnets to the shaft in order to make a permanent magnet rotor.

Mizutani et al. use a pair of magnets (21a, 21b) with adjacent magnet pairs having magnetic polarities which are reversed with respect to each other for the purpose of reducing noise.

Since Frederick, Morrill and Mizutani et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to mount on ends of each support with a pair of magnets, with each pair containing magnets of opposite polarity, each magnet having pole faces extending parallel to the axial direction of the shaft and the polarity of adjacent magnet pairs being reversed with respect to each other as respectively taught by Morrill and Mizutani et al. for the purposes discussed above.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Information on How to Contact USPTO

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL
October 27, 2002